



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/046,639	10/26/2001	Bin Li	10.1020	1095

21919 7590 07/18/2006

MEREK, BLACKMON & VOORHEES, LLC  
673 S. WASHINGTON ST.  
ALEXANDRIA, VA 22314

EXAMINER

RIZK, SAMIR WADIE

ART UNIT PAPER NUMBER

2133

DATE MAILED: 07/18/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/046,639	<b>Applicant(s)</b> LI ET AL.	
	<b>Examiner</b> Sam Rizk	<b>Art Unit</b> 2133	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 01 May 2006.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTIONS**

- Claims 1-24 are pending
- Claims 1-24 have been rejected

***Response to Arguments***

1. Applicant's arguments in regard to claims 1, 10, 15 and 16 see pages 2-3 filed on 5/1/2006 have been fully considered but they are not persuasive.
2. The applicant on page 2 argue that nowhere in the patent does Locke et al mention or teach:

the use of "coding gain" or transmission power as a variable or a key in determining the maximum transmission rate. Locke et al. al. merely shows data rate as affected by the Reed-Solomon parity bytes required to meet the maximum-allowed corrected bit error rate by selection of codeword.

The Examiner notes that Locke teaches the iterative method of changing the coding gain as one of the parameters for optimal codeword selection in the disclosed algorithm in col. 5, lines (10-12):

**The formula is Adjust max bytes for the coding gain due to trellis coding. It might also be possible to adjust the coding gain for this factor instead.**

In addition, Locke teaches in the first preferred embodiments in col. 3, lines (9) through col. 26 the selection method of Reed-Solomon codeword configuration to maximize error-corrected data rate given the channel analysis parameters that comprises; BER, MSE, **transmitters power**, noise power and bit rate

(constellation density) [emphasis added] and channel analysis essentially estimate p.

The Examiner notes that coding gain is an industry standard (Wicker, S.B. Error Control System for Digital Communication and Storage, 1995 by Prentice-Hall, page 11, lines (14-16) copy is provided) defined as the amount of improvement in BER is usually discussed in terms of the additional transmitted power that is required to obtain the same performance without coding. This difference in power is called coding gain.

3. the applicant on page 3 argue that:

Therefore the steps recited in the present claims are not met, namely:

(a) establish a relationship between said parameters and a coding gain.

(b) initializing said coding gain to a minimum predetermined value;

(c) determining, based on said relationship between said parameters and said coding gain, an intermediate set of parameters for providing a preferred result for said coding gain.

The Examiner refers the applicant to FIG. 3 and section [2], col. 3 through col. 26 in Locke

4. Applicant's arguments in regard to claims 20 and 21 see page 3 filed on 5/1/2006 have been fully considered but they are not persuasive.

The Examiner maintains same the same rejection as per the office action filed on 10/31/2005.

***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Rizk whose telephone number is (571)-272-8191. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Albert Decady can be reached on (571)272-3819. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for

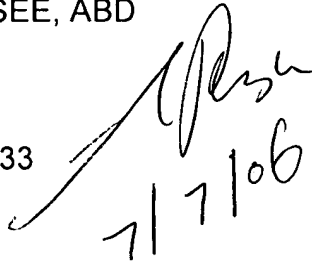
Art Unit: 2133

published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sam Rizk, MSEE, ABD

Examiner

ART UNIT 2133



7/7/06



~~ALBERT DECADY~~  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2100